

ABSTRACT

Analysis of Risk Factors that Affect the Pulmonary Function (Case Study towards the Workers in Diesel Power Plant of Sektor Pembangkitan Mahakam, Samarinda City)

The diesel power plant (PLTD) Sektor Pembangkitan Mahakam is a power plant which use a diesel engine in Samarinda City. Diesel engines will cause a problems, for example, it will produce air pollution such as smoke (soot) and exhaust gas, especially nitrogen dioxide (NO₂) and sulfur dioxide (SO₂) derived from the combustion of diesel fuel, which may trigger pulmonary function impairment.

This study aimed to analyze the factors that might cause the case of pulmonary function on the workers in diesel power plant of Sektor Pembangkitan Mahakam, Samarinda. This study used quantitative method which were done through cross-sectional and observational type of research. There were 58 people which became respondents, 29 of them were in the diesel power plant and the rest were in the office.

Based on the analysis used logistic regression wald test, it was revealed that there were several factors which affected the pulmonary function and it caused pulmonary impairment. Risk factors were based on the highest of risk that is nutritional status, personal protection equipment, exercise habit, smoking habit, age and period of work. Meanwhile, duration of work had no effect on pulmonary function or pulmonary function impairment.

Based on the result, that the company should do a job rotation, increase the surveillance, develop the working environment and the provision of personal protective equipment (respirator with cartridge), and also concern about the necessity of creating some rules, such as a prohibition on smoking in the workplace and obliging regular sports activities on workers.

Keywords: diesel power plant, diesel oil, pulmonary function, workers